

# MiM & MiM-Like

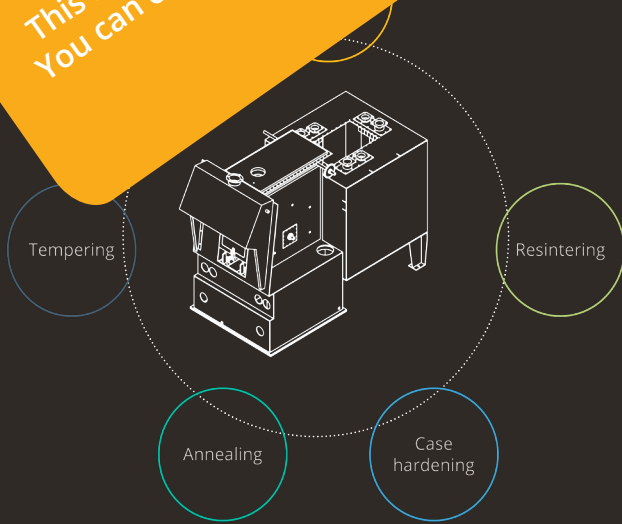
## Heat treatment

As cast or wrought metal parts, MiM & MiM-Like parts are heat treated to increase strength, hardness and wear resistance. Similar results.

The degree of hardening is dependent on the alloy composition, carbon, alloying elements and the heat treatment process used.

The most common heat treatment processes, through hardening, tempering, annealing, case hardening, and resintering.

This is only a preview of our material summary. You can order the original poster via our website. [www.pollen.am/contact-us](http://www.pollen.am/contact-us)



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Hot isostatic pressing (HIP) is a secondary process used to increase the density of MIM components after sintering, to increase the ductility and fatigue resistance of high-end materials. Under typical pressures between 400 and 2,070 bar and temperatures up to 2 000 °C materials can reach 100 % of its maximum theoretical density.

Resintering is usually made at higher temperatures and conditions similar to those of the first sintering. It relieves stress or removes the porosity that occurs during coining or repressing.

Hardenable for a certain amount of time. The capacity of the microstructure to transform from austenite to martensite depends on the alloy composition. In wrought materials, the hardenability is determined by the chemistry and the grain size. For cast materials it is linked to the grain size and the alloy composition.

Carburizing is a surface hardening process in which the carbon content of the surface of low carbon steel is increased by exposure to an atmosphere of carbon at a temperature in the austenite phase fields.

Nitriding is a surface hardening heat treatment that introduces nitrogen into the surface of steel while it is in the ferritic conditions.

Carbonitriding is a surface hardening heat treatment that introduces carbon and nitrogen into the austenitic steel.